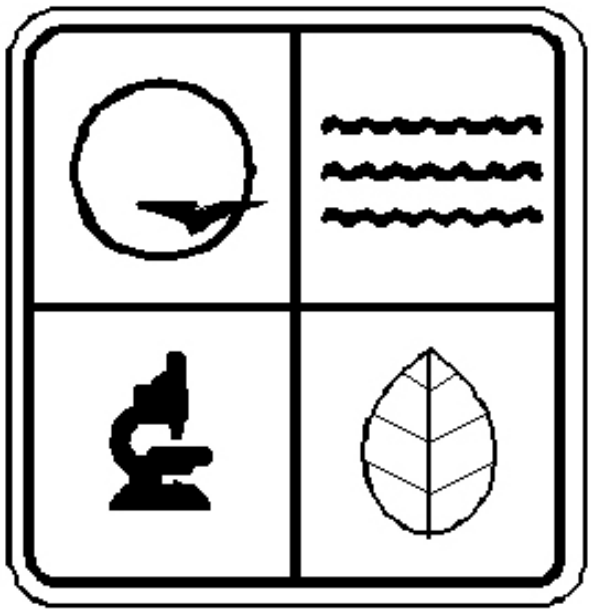
Dexter Baseline

EDM Calibration Baseline
Stoddard County, Missouri



Established by

Land Survey Program
Missouri Department of Natural Resources

1984

DEXTER EDM CALIBRATION BASELINE

The Dexter EDM Baseline is located along the west side of the main North-South runway at the Dexter Municipal Airport. Airport personnel should be notified before using baseline.

To reach the airport from the junction of Missouri Highways 25 and 114 in the southeast part of Dexter, go east on Highway 114 ¾ mile to the airport entrance on the south, turn right and go south about 0.3 miles. Airport administration is the first building past the restaurant at the parking area.

To reach the baseline return to Highway 114, turn left and go west about ¼ mile to the entrance just west of East Park. Turn left and go south 0.15 miles along the west side of the baseball diamonds to the end of pavement. Continue southerly and easterly 0.25 miles along a dirt track road between agricultural fields to the 0 meter station described following:

Station 0 meters is 212 feet northwest of the northwest corner of the runway, 45 feet northeast of the center of the dirt track road one-foot south of a witness post and sign. At present the station is about 10 feet southwest of the center of a pile of rusted farm implements.

To reach the 150-meter station continue southerly along dirt track road to station on right. The station is referenced by two concrete nails along the west edge of the runway. The northerly nail is on the west edge of the runway even with the top of the numbers '18' painted on the runway. The station is 96.9 feet southwest of the northerly nail, 97.3 feet northwest of the southerly nail, and one foot east of a witness post and sign.

Th 400-meter station is reached by continuing southerly along the dirt track road. It is also on the right or west side of the road and is also referenced by two concrete nails along the west edge of the runway. Station 400 is 89.3 feet southwest of the northerly nail, 88.7 feet northwest of the southerly nail, and one foot east of a witness post and sign.

To reach the 1375 meter station continue southerly along dirt track road until it meets the abandoned northeast-southwest runway. Turn right and go southwesterly about 400 feet to an abandoned taxiway. Turn left and go southeasterly to the edge of the active North-South runway (DO NOT DRIVE ON ACTIVE RUNWAY). Turn right and go southerly in grass area outside landing lights along west edge of runway to abandoned northeast-southwest taxiway. Continue southerly across taxiway. Remain west of runway lights and continue southerly in grassy area on west side of runway.

Station site is about 180+ feet north of the south end of the runway. It is 55.6 feet north-northeast of the northeast corner of a control box for a directional landing light, 185.4 feet northwest of the southwest corner of the runway, 60.5 feet northwest of a concrete nail in the west edge of the runway, 43.3 feet west-southwest of a runway light, 60.5 feet southwest of a concrete nail in the west edge of the runway which is about 1.5 feet south of the south edge of the numbers '36' painted on the runway, and one foot east of a witness post and sign.

The baseline station elevations are as follows:
0 meter - 30.48 m
150 meter - 30.33m
400 meter - 29.49m
1375 meter - 28.46m
Elevations are assumed

Electronic Distance Measuring (EDM) Calibration Baselines in Missouri

The Missouri Department of Natural Resources has established 12 Electronic Distance Measuring (EDM) calibration baselines in Missouri. Despite the fact that modern equipment is highly sophisticated and provides a direct readout of the distance to the nearest hundredth of a foot or millimeter at push of a button, it can also give an erroneous reading. The EDM baseline will allow the operator to verify that the instrument is in calibration and the instrument is being operated properly.

Each EDM baseline consist of 4 monumented stations. The monuments are spaced nominally at 0 meters, 150 meters, 400 meters and 1100 to 1375 meters. Each station will be occupied with the EDM equipment and a measurement made to the 3 other stations. This will give a total of 12 measurements. The results will determine the scale factor and a system constant for the EDM instrument.

The EDM operator should use the same procedures as in every day fieldwork. This will not only confirm that the equipment is in good working order, but will ensure the complete method of collecting data. The measuring system includes not only the instrument but the tripods, tribrachs, prisms, thermometers and barometers/altimeters as well.

WHEN TO CALIBRATE YOUR INSTRUMENT?

- Upon receipt of a new instrument
- Immediately after each servicing
- Anytime the operator feels the instrument is not working properly
- Before and after DNR or other government agency contracts

BEFORE RUNNING THE BASELINE PERFORM THE FOLLOWING

- Check and adjust optical plummets, bulls-eye bubbles and plumbing poles.
- Check thermometers and barometers/altimeters
- Make sure all tripods are rigid and stable
- Clean prisms
- Fully charge all batteries
- Have an EDM Calibration Report form for the baseline you are running.

When filling out the EDM Calibration Report form, fill in all lines that apply and add addition information if needed.

IMPORTANT NOTE

Before each measurement, enter the temperature and station pressure or absolute pressure into the instrument. The barometric pressure given over the radio and at airports has been reduced to sea level. DO NOT ENTER SEA LEVEL PRESSURE INTO THE EDM. One method used to find station pressure or absolute pressure is by elevation. The barometric pressure is reduced 0.1 inches of mercury for every 90 feet of elevation. So, to correct the sea level pressure obtained from the radio or airport, pick an average elevation for your area and divide by 90. Example: if the elevation is 1000 feet, dividing 1000 by 90 equals 11.11. Therefore, subtract 1.11 inches from the sea level pressure to obtain station pressure or absolute pressure.

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY AND RESOURCE ASSESSMENT DIVISION

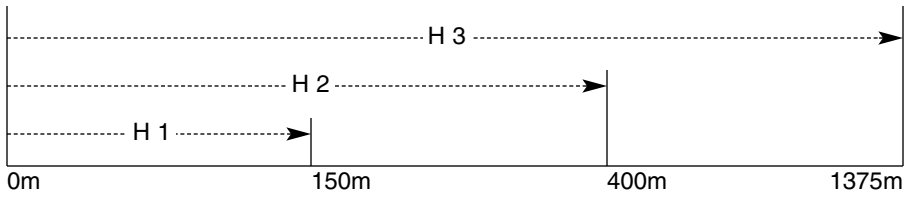
EDM CALIBRATION REPORT – DEXTER EDM BASELINE (HORIZONTAL)

DATE	COMPANY	REFLECTOR SETUP
		☐ Tripod with tribrach ☐ Prism pole ☐ Bipod pole

INSTRUMENT TYPE AND MODEL

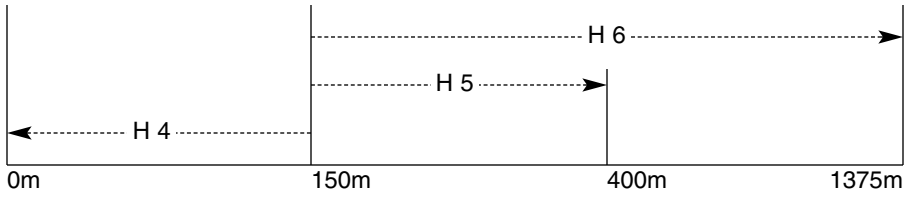
NOTE: ALL DISTANCES SUBMITTED SHALL BE HORIZONTAL.

E.D.M. AT 0m



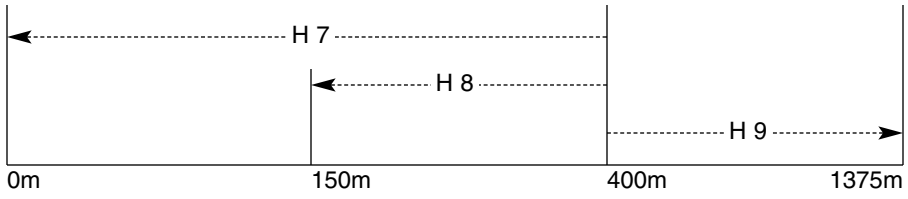
H 1 =	H 2 =	H 3 =	TEMP
H 1 = (150.0021m)	H 2 = (399.9965m)	H 3 = (1374.9813m)	*PRESS

E.D.M. AT 150m



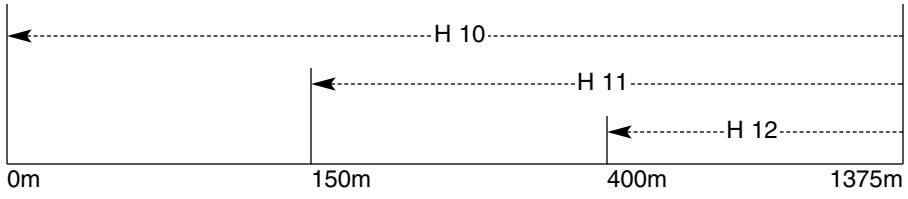
H 4 =	H 5 =	H 6 =	TEMP
H 4 = (150.0021m)	H 5 = (249.9944m)	H 6 = (1224.9792m)	*PRESS

E.D.M. AT 400m



H 7 =	H 8 =	H 9 =	TEMP
H 7 = (399.9965m)	H 8 = (249.9944m)	H 9 = (974.9849m)	*PRESS

E.D.M. AT 1375m



H 10 =	H 11 =	H 12 =	TEMP
H 10 = (1374.9813m)	H 11 = (1224.9792m)	H 12 = (974.9849m)	*PRESS

*Barometric pressure for EDM calibration **must be station pressure**. Do not use barometric pressure reduced to sea level.

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY AND RESOURCE ASSESSMENT DIVISION

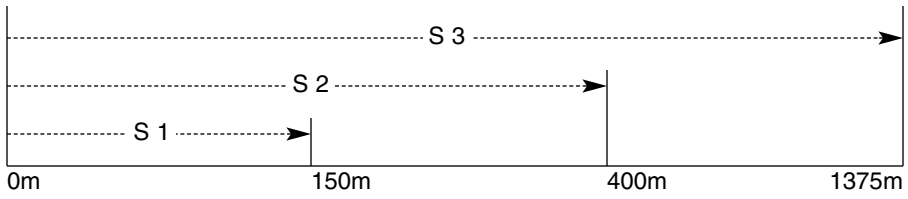
EDM CALIBRATION REPORT – DEXTER EDM BASELINE (SLOPE)

DATE	COMPANY	REFLECTOR SETUP
		☐ Tripod with tribrach ☐ Prism pole ☐ Bipod pole

INSTRUMENT TYPE AND MODEL

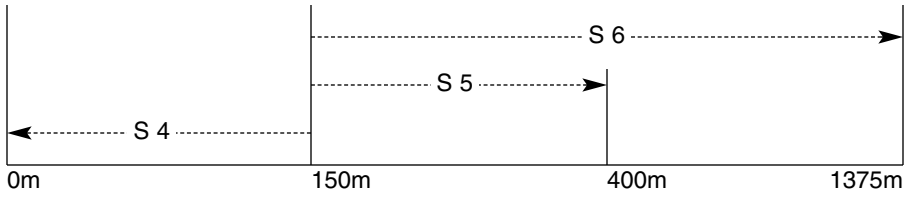
NOTE: ALL DISTANCES SUBMITTED SHALL BE SLOPE.

E.D.M. AT 0m



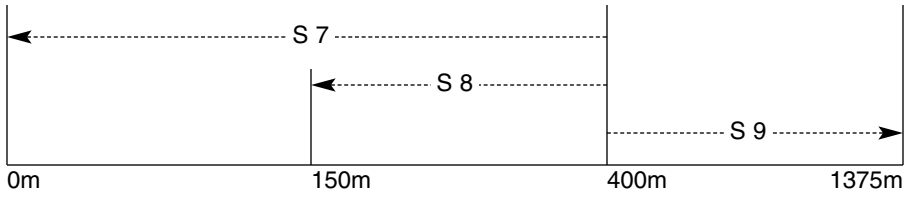
HI =	S 1 =	S 2 =	S 3 =	TEMP
	H 0 =	H 0 =	H 0 =	*PRESS

E.D.M. AT 150m



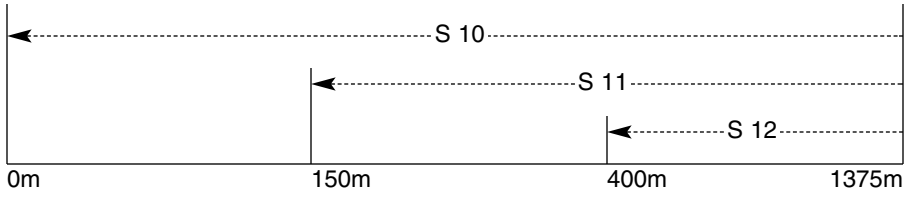
S 4 =	HI =	S 5 =	S 6 =	TEMP
H 0 =		H 0 =	H 0 =	*PRESS

E.D.M. AT 400m



S 7 =	S 8 =	HI =	S 9 =	TEMP
H 0 =	H 0 =		H 0 =	*PRESS

E.D.M. AT 1375m

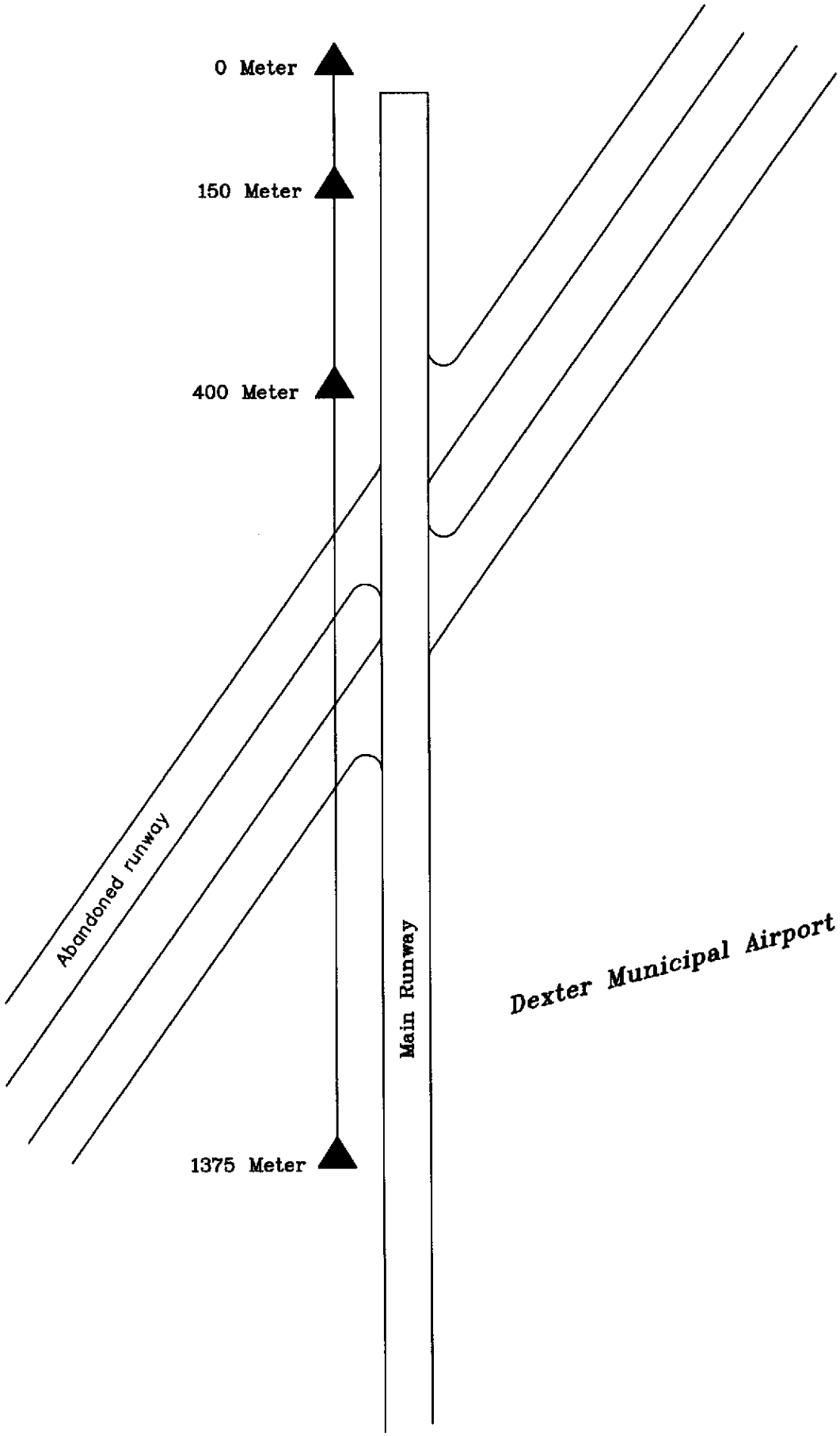


S 10 =	S 11 =	S 12 =	HI =	TEMP
H 0 =	H 0 =	H 0 =		*PRESS

Heights or delta elevations between monuments. (0m assumed to be 30.48)
0m = 30.48m 150m = 30.33m 400m = 29.49m 1375m = 28.46m

*Barometric pressure for EDM calibration **must be station pressure**. Do not use barometric pressure reduced to sea level.

Dexter Baseline



DATE OF SKETCH 2003